Evaluation Report of NIH K-12 Program

Title: How Do Children Stigmatize People with Mental Illness?

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Description:

This report evaluates one component within the NIH K-12 program, the NIH Curriculum Supplements. The NIH Curriculum Supplements are K-12 teacher's guides to two weeks' of lessons that explore the science behind current health topics. The modules are sent free of charge upon request to educators across the United States. Over 50,000 educators have one or more curriculum supplement. This study specifically examines one supplement, The Science of Mental Illness, and its effect on children's attitudes about mental illness.

One way to promote the elimination of the stigma of mental illness is targeting this phenomenon in children. Research on this stigma change agenda requires preliminary studies that describe the experience of stigma in children. Earlier research on adults has validated two models that explain the public stigma of mental illness: (1) Viewing people as personally responsible for their mental illness leads to diminished pity and increased anger, which, in turn, results in withholding help and endorsing treatment in segregated settings (2) Viewing people with mental illness as dangerous yields fear and social avoidance. The purpose of this study is to validate these models on children in grades six to eight. 1379 children completed the revised Attribution Questionnaire (r-AQ) as part of a pre-test of a larger study on a mental health education program. The r-AQ assesses the components of the personal responsibility and dangerousness models. Data from this study also permitted testing of the roles of demographics in these social cognitive models. Subsequent analyses using manifest model structural equations were mixed but mostly showed adequate fit for multiple versions of the models. These results suggest that models of blame and dangerousness are relevant to the way that ten to thirteen year olds stigmatize mental illness. Demographics were not found to satisfactorily fit these models. Implications of these findings for the stigma change agenda are discussed.

Running head: STIGMA AND ADOLESCENTS

How do Children Stigmatize People with Mental Illness?

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Abstract

One way to promote the elimination of the stigma of mental illness is targeting this phenomenon in children. Research on this stigma change agenda requires preliminary studies that describe the experience of stigma in children. Earlier research on adults has validated two models that explain the public stigma of mental illness: (1) Viewing people as personally responsible for their mental illness leads to diminished pity and increased anger, which, in turn, results in withholding help and endorsing treatment in segregated settings (2) Viewing people with mental illness as dangerous yields fear and social avoidance. The purpose of this study is to validate these models on children in grades six to eight. 1379 children completed the revised Attribution Questionnaire (r-AQ) as part of a pre-test of a larger study on a mental health education program. The r-AQ assesses the components of the personal responsibility and dangerousness models. Data from this study also permitted testing of the roles of demographics in these social cognitive models. Subsequent analyses using manifest model structural equations were mixed but mostly showed adequate fit for multiple versions of the models. These results suggest that models of blame and dangerousness are relevant to the way that ten to thirteen year olds stigmatize mental illness. Demographics were not found to satisfactorily fit these models. Implications of these findings for the stigma change agenda are discussed.

How Do Children Stigmatize People with Mental Illness?

During the past two decades, research has begun to describe the problems wrought by mental illness stigma and address ways to diminish it (Corrigan, 2005). In partnership with advocacy groups, this research has begun to lay out a program to erase the stigma in order to increase the opportunities of people with mental illness. Children are often identified as important targets for stigma change (Wahl, 2002); perhaps the cognitive processes of elementary school students could be influenced so that prejudice about and discrimination towards people with mental illness never develops or is muted. Ideally, we could foster future generations of adults where the stigma of mental illness is neither so prevalent nor egregious. These kinds of programs require a better understanding of how stigma develops and is maintained in children.

Theory and research on mental illness stigma has been significantly advanced through a translational research agenda; i.e., enhancing theoretical and methodological approaches to mental health issues by extrapolating related ideas from basic behavioral research. Research on mental illness stigma has borrowed heavily from basic social cognitive research that explains the prejudice and discrimination experienced by minority groups. The translational research agenda has thus far largely been applied to understanding how adults stigmatize people with mental illness and ways to diminish it. The purpose of this paper is to extrapolate and test adult models on children.

Two models of stigmatizing attitudes have been studied on adults: (1) persons with serious mental illness are personally responsible for their symptoms/disabilities and (2) they are dangerous and should be avoided. Weiner (1995) developed a model of causal attribution that at least partly explains the relationship between stigmatizing attitudes and discriminatory behavior.

As outlined in Figure 1, Weiner believed that attributing personal responsibility for a negative event (e.g., "That person causes his crazy behavior.") leads to anger ("I'm sick and tired of that kind of irresponsibility!"), diminished helping behavior ("I'm not going to give him a ride."), and increased punishment ("He should be locked away in an asylum."). Conversely, attributing no blame for a harmful event ("She can't help herself; she's mentally ill.") leads to pity ("That poor woman is ravaged by mental illness.") and the desire to help ("I'll rent her a room until she's back on her feet."). The attribution model has been validated on several samples (Dooley, 1995; Graham et al., 1997; Menec & Perry, 1998; Reisenzein, 1986; Rush, 1998 Steins & Weiner, 1999; Zucker & Weiner, 1993) including those specific to mental illness stigma (Corrigan, Rowan et al., 2002; Corrigan, Markowitz et al., 2003).

-- Insert Figure 1 about here. --

Responsibility attributions seem to make sense for explaining the relationship between mental illness stigma and discriminatory behavior. However, these kinds of attributions markedly differ from typical attitudes about mental illness that emerge in factor analyses of public stigma; namely, that people with serious mental illness need to be segregated from society because they are <u>dangerous</u> (Brockington et al., 1993; Cohen and Struening, 1962; Link et al., 1999; Pescosolido et al., 1999). We have outlined one speculative model elsewhere (Corrigan, 2000) and repeat it at the bottom of Figure 1. According to this model, attributing a person's behavior as dangerous leads to fear; most people respond to violent threats of any kind with apprehension and avoidance (Johnson-Dalzine et al., 1996).

The purpose of this study is to determine whether stigma models developed for adults are explanatory for the stigma experiences of children in sixth, seventh, and eighth grades. Researchers have argued that stigma, prejudice, and discrimination are likely to be a different

process in children because of their limited cognitive development. For example, research by Aboud (1993, 2003) has shown that concrete operational processing is likely to yield more discrimination in preschool children and kindergarteners than adults. Interestingly, as children age (e.g., 10 to 13 years old), cognitive differences with adults relevant to stigma seem to diminish (Corrigan, Watson, & Lahey, 2004), We test this assumption by examining whether the path models established for adults show similar goodness of fit on middle schoolers.

These data also permitted testing of another set of hypotheses; namely, do demographic variables describe a model with good fit and significant associations with the social cognitive models? This aspect of the models is also illustrated in Figure 1. Previous research has examined the effects of two variables -- gender and ethnicity -- on the responsibility-based model of mental illness stigma. These studies typically viewed gender and ethnicity as exogenous variables in the model. In terms of gender, women were significantly less likely to endorse the stigma of mental illness than men (Corrigan, Watson, & Miller, 2005; Farina, 1998). In terms of ethnicity, people of color, compared to the white majority, were less likely to blame individuals for their mental illness, more likely to sympathize with them, and less likely to avoid them in social settings (Corrigan, Backs et al., 2001; Schnittker, Freese, & Powell, 2000). Hence, we expect girls from minority samples to be less likely to endorse the stigma of mental illness. Research has also examined whether cognitive models of responsibility attributions and perceptions of dangerousness vary with childhood cognitive development. Although there are significant differences in development that would affect the social cognitive models between kindergarten and high school (Corrigan, Watson, & Lahey, 2004), we would expect to find no such variance in the relatively narrow years of the participants in this study: children in sixth, seventh, and eighth grades.

Methods

1566 students from 23 schools in 16 states from around the country were recruited as part of a pilot study examining the impact of a middle school curriculum titled The Science of Mental Illness. The curriculum was developed to provide children with state-of-the-art knowledge about mental health and to decrease the stigma of mental illness. Teachers were solicited to learn the curriculum, and participate in the field study, through newsletters of the National Association of Biology Teachers and the National Science Teachers Association. Fourteen teachers were selected for the study and volunteered their students to participate in the pilot. Only data from the pretest is reported here.

1391 children provided sufficient responses to baseline stigma measures to be included in the analyses reported in this paper. The n of individual analyses was as low as 1375 because of missing data for those analyses. The subsample was 52.1% female and was drawn from three grades: 6th grade (14.5% of the subsample), 7th grade (55.9%), and 8th grade (29.6%). In terms of ethnicity, 1.9% of students reported themselves as Asian American, 2.4% African American, 16.2% Hispanic, 1.3% Native American, 0.4% Pacific Islander, and 69.8% European American. The remaining 7.5% identified with two or more ethnic groups. Research participants were divided into white and non-white groups for the analysis of ethnicity effects on the social cognitive models.

Students completed the revised Attribution Questionnaire (r-AQ), an instrument that measures the factors outlined on the right side of Figure 1. In an earlier study on the original Attribution Questionnaire (Corrigan, Markowitz, et al., 2003), respondents read a brief statement about Harry, a 30 year old single man with schizophrenia. The vignette is very brief to better represent the respondent's reaction to the schizophrenia label rather than other information.

Respondents in the earlier study then completed 27 items on 7-point, Likert type, agreement scales. Three items were written to represent each of the eight factors in Figure 1 plus coercion, an additional factor not used in this paper. The factor structure and reliability of the original AQ were validated in two confirmatory factor analyses (Corrigan, Markowitz et al., 2003; Corrigan Rowan et al., 2002).

Two revisions were made to the AQ for the study. First, the vignette was changed to represent a child rather than an adult: "There is a new student in your class who just came from another school. You have heard that this student has a mental illness." Note that this is the entire vignette and, as in the original AQ, was purposefully kept short to capture the research participant's reaction to the schizophrenia label. Second, the number of items was reduced to eight to generate a short test of stigma. Smaller instruments meet some of the efficiency needs imposed by survey research. Based on results from our prior confirmatory factor analyses (Corrigan, Markowitz, et al., 2003; Corrigan Rowan et al., 2002), the single item that most highly loaded into each of the eight factors in Figure 1 was incorporated into the r-AQ. Items are provided verbatim in Table 1. All research participants received r-AQ items in the order of Table 1.

Results

Means and standard deviations of the eight items from the r-AQ are summarized in the first column of Table 1. Note the small means for some of the variables: responsibility and segregation. The restricted range evident in these means may limit potentially significant associations. Path analysis with manifest variables was used to test the theoretical models outlined in the right side of Figure 1 because it is one of the more robust measures of both the size and direction of associations among a set of variables. All analyses were conducted using

the SAS System's CALIS procedure (Hatcher, 1994), adopted the maximum likelihood method of parameter estimation, and were performed on the variance-covariance matrix.

Table 1 also includes the correlation matrix for the eight variables from which the variance-covariance matrix derives. Several correlation coefficients were small and insignificant; e.g., between pity and anger or between pity and fear. Small correlations make sense in these cases. While in the same model, pity and anger are represented as independent paths. Correlations like those represented by pity and fear are small because they come from the two independent models: responsibility and danger.

Goodness of fit indices for the various models are presented in Table 2. The chi-square statistic included in this table provides a test of the null hypothesis that the reproduced covariance matrix has the specified model structure. Non-significant chi squares support good fit; the statistic, however, is very sensitive to sample size and departures from multivariate normality and may often result in the rejection of a well-fitting model. Table 2 includes three additional fit indices: the comparative fit index (CFI), non-normed fit index (NNFI), and normed fit index (NFI) (Bentler, 1989; Bentler and Bonett, 1980). Scores on these indices vary from 0 to 1 and are considered to support fit when greater than .90. Finally, Table 2 includes standardized coefficients representing the size of the association of individual paths within each model. Significant t-values ($t>1.96$, $p<.05$) for individual coefficients are marked with an asterisk.

-- Insert Tables 1 and 2 about here. --

Responsibility

Two responsibility path models are summarized in Table 2 predicting “help” and “segregation” respectively. Chi square statistics for both models do not support a good fit for the models. However, the other fit indicators largely supported the models. CFI and NFI were

greater than .90 for both models; NNFI approached .90 for the "help" model. As outlined on the right side of Table 2, standardized coefficients for the elements of all the models were significant and corresponding standard errors were satisfactory. Willingness to help was positively associated with pity and inversely associated with anger; R^2=.09. Responsibility inversely predicted pity and directly predicted anger. Endorsing segregation was positively associated with anger and inversely associated with pity; R^2=.13.

Dangerousness

Table 2 also provides two versions of the dangerousness model predicting avoidance and segregation. Similar to the findings above, fit indicators were mixed for avoidance. Chi square did not support a good fit but CFI and NFI did and NNFI approached .90. The two standardized path coefficients were significant and standard error was appropriate. Fear was positively associated with avoidance (R^2=.11). Danger predicted fear, though at a fairly low level (R^2=.01). Note that none of the fit indicators supported the model for danger, fear, and segregation.

Effects of Gender, Ethnicity, and Grade

A second important set of questions for this study focused on demographics as moderator variables of the social cognitive models. We added three demographic variables -- gender, ethnicity, and grade level -- as exogenous variables in Paths A and B (see the left hand side of Figure 1). The structural equations for responsibility failed to reach good fit when all three demographic variables were included in the structural equations; goodness of fit indicators ranged between .59 and .78 and chi squared was highly significant ($p<.001$). We expected the narrow grade level of participants in this study would not provide a sufficiently broad range of cognitive development so grade level would not fit well in the model. The results support this expectation; the standardized estimate representing the relationship between grade level and

responsibility, 0.04 -- was not significant ($p>.10$). We reran the fit indicators with grade level removed from the equations. Once again the model combining social cognitive constructs and demographics (in this case, gender and ethnicity) was not significant. Fit indicators ranged from .62 to .80 and chi squared with significant ($p<.001$). Nor did any of the other models on dangerousness with demographic variables show good fit. Hence, we conclude that gender and ethnicity failed to fit well in our models.

Discussion

This study examined whether two models that describe the stigma of mental illness in adults also applies to children. Results were mixed but mostly supported the comparison. Children who viewed other children as responsible for their mental illness expressed more anger and less pity towards them, which, in turn, was related to being less willing to help them and endorsing treatment in segregated settings. This model is consistent with the assertions of Weiner's (1995) attribution theory. In addition, children who viewed people with mental illness as dangerous were likely to be fearful of them, and try to avoid them. Note that all the standardized estimates representing specific relationships in the two models were significant. Hence, this study shows some support for the adult models of the stigmatizing processes as applied to sixth, seventh, and eighth graders.

Findings like these have implications for developing programs meant to diminish stigma. For example, avoidance is an especially important variable in understanding behavior in children. It may explain why some people labeled as different because of mental illness are ostracized by peers. Hence, anti-stigma programs wishing to enhance the quantity and quality of interactions between children labeled mentally ill and their peers would benefit from these kinds

of findings. Most of the research in this area targets the prejudice related to ethnicity; therefore, our conclusions here are based on the extrapolation of these findings.

Aboud and colleagues (1996, 1999) hypothesized that peers might be better resources for stigma change because they are less likely to censor opinions about a topic and because the cognitive style of communication is automatically at the level of a same age peer. A typical format for this kind of strategy is to pair a low prejudice child with a same age, familiar, high prejudice child. The dyad is then presented with a stimulus picture (e.g., for racial prejudice, separate pictures of a black and white child), asked to rate the person in the picture across a series of positive (the child is neat, honest, a nice person) and negative (the child is a bully, lazy, and dirty) values. Of more importance, the dyad is asked to discuss their rationale for each rating. Interestingly, observers of these dyads note that neither the high nor low prejudice child attempts to dissuade their partner in terms of rating or rationale. Of further note, although it is clear at the beginning of these discussions who is the high and low prejudice child, the dyad appeared quite similar in response by the end of the discussion (Aboud & Fenwick, 1999; Aboud & Doyle, 1996). More balanced evaluation of ingroups and outgroups corresponded with descriptions of Whites that included more negative attributes and of Blacks with more positive features. Other research on peer collaboration shows that the solutions generated by participants are more mature than their initial positions (Chapman & MacBride, 1992). Specific qualities of the interaction seem to facilitate positive gains. For example, expression of contradictory positions along with an explanation is better than agreement and better than no explanation (Nelson & Aboud, 1985). Interpretive statements that exceed mere description are instrumental in helping dyads achieve more balanced statements (Teasley, 1995; Ticao & Aboud, 1998).

Future research needs to adapt these findings to changing children's attitudes about mental illness.

The study in this paper also examined the inclusion of demographics in the social cognitive model. Results failed to find good fit in the models that incorporated grade, ethnicity, and gender. We argued in the Introduction that students in grades sixth through eighth are fairly homogenous in terms of cognitive development; this limited variance would fail to yield significant grade effects in the model. In our previous research, ethnicity mostly represented African American (Corrigan, Backs et al., 2001; Schnittker, Freese, & Powell, 2000). Non-white research participants in this study were largely Hispanic (53.6% of the Non-white sample). Cultural differences between Hispanics and African Americans may explain the absence of significant effects for ethnicity. Moreover, language differences between African Americans and Hispanics may have resulted in the lack of support for ethnicity in our models. The lack of good fit for the model with gender is more difficult to explain. In a comprehensive review of studies on gender and mental illness stigma, Farina (1998) found no significant effects between men and women on some studies. The absence of significant model fit in our study replicates some of Farina's conclusions.

The study was limited by the relatively small R^2 describing the size of the relationship between endogenous variables and other elements of the path. Hence, the models used in this study were limited in their explanation of discriminatory behaviors and accounted for significantly less variance than those found on the adult samples (Corrigan, Markowitz et al., 2003; Corrigan, Rowan et al., 2002). As alluded to earlier in this paper, perhaps this difference is due to participants of this evaluation being children. Absent from the study reviewed in this paper was assessment of cognitive stage and how it may have influenced endorsing aspects of

the stigma model. In particular, we hypothesize that development of abstract cognitive processes will be an especially important mediator of stigma. This is an interesting construct that needs to be integrated into future studies.

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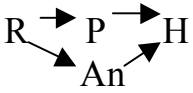
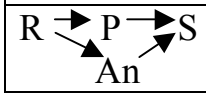
Table 1. Means, standard deviations, and intercorrelations of eight factors.

	Mean	SD	Respons	Pity	Anger	Help	Segregate	Danger	Fear	Avoid
1. Responsibility. It is not the student's fault if he or she has a mental illness.	0.8	1.6	1.00							
2. Pity. I feel sorry for the new student.	4.9	1.8	-.16**	1.00						
3. Anger. The new student makes me angry.	2.2	1.5	.16**	-.04	1.00					
4. Help. I would help the new student.	5.0	1.8	-.13**	.14**	-.16**	1.00				
5. Segregation. The new student should be locked in a mental hospital.	1.7	1.4	.16**	-.11**	.25**	-.29**	1.00			
6. Dangerous. The new student is not dangerous.	2.2	1.6	.08**	-.10**	.09*	-.17**	.15**	1.00		
7. Fear. I am scared of the new student.	2.3	1.6	.09**	.05	.24**	-.24**	.32**	.09**	1.00	
8. Avoidance. I will try to stay away from the new student.	2.8	1.7	.13**	-.06**	.23**	-.41**	.39**	.11**	.33**	1.00

Note. * $p<.05$ ** $p<.01$

Table 2. Summary of SEM for various BSCS models

MODEL	FIT INDICATORS					PATH COEFFICIENTS			
	p-value for Chi^2	Chi^2/df	CFI	NNFI	NFI	*Path and corresponding standardized coefficient*			
	.001	6.58	.958	.872	.951	R-P -.19*	R-An .23*	P-H .11*	An-H -.27*
	.001	14.38	.920	.759	.915	R-P -.19*	R-An .22*	P-S -.08*	An-S .35*
D → F → Av	.003	8.77	.956	.869	.951	D-F .09*	F-Av .33*		
D → F → S	.0001	22.58	.877	.632	.873	D-F .10*	F-S .31*		

Note * t value for coefficient exceeds 1.96, $p<.05$; CFI: comparative fit index; NNFI: non-normed fit index; NFI normed fit index

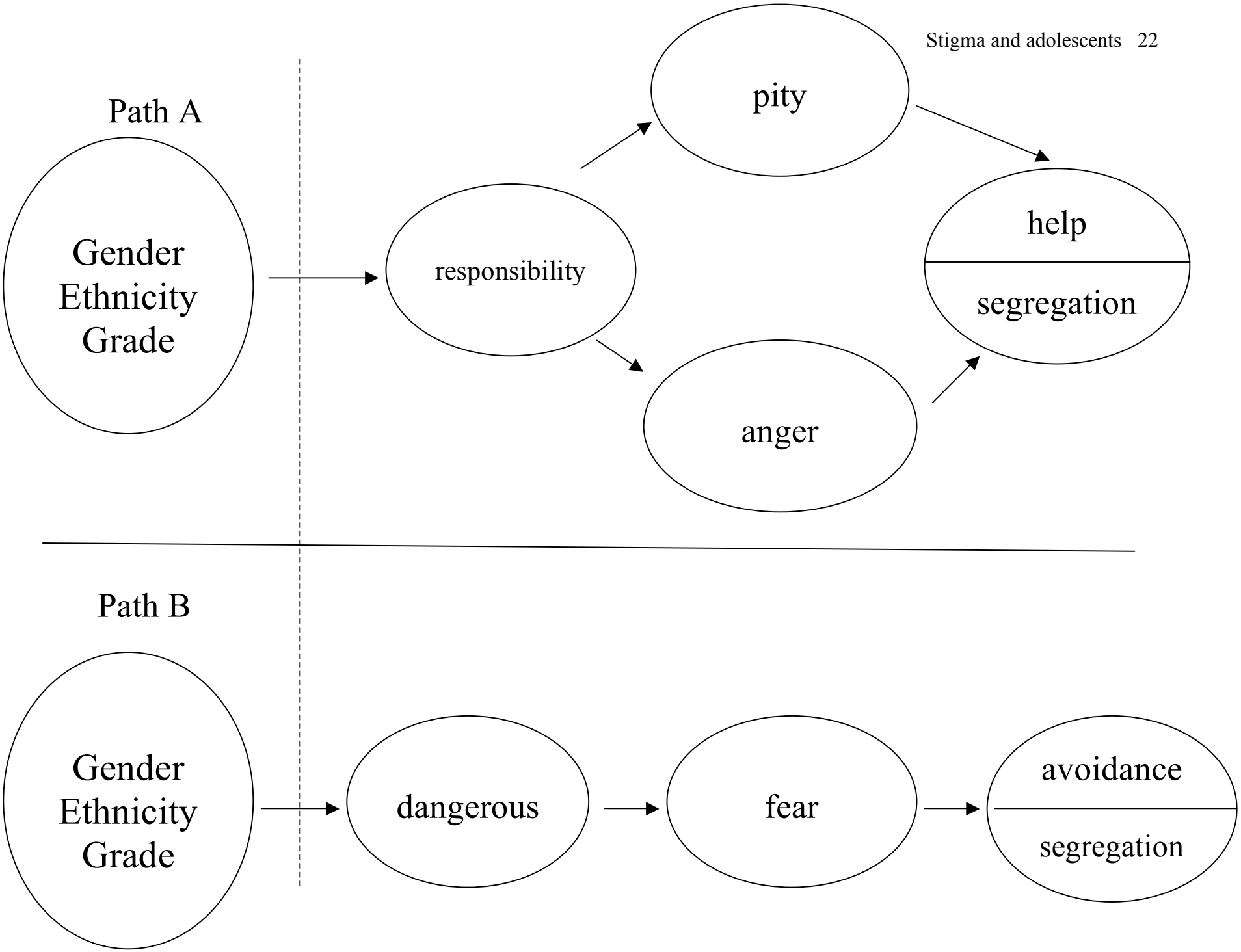
R=Responsibility Av=avoid H=help

P=pity D=danger F=fear

S=segregate An=anger

Figure Captions

Figure 1. Hypothetical paths accounting for stigmatizing reactions. The right side of Path A represents relationships between attributions of personal responsibility for mental illness, subsequent pity or anger, and the effects of this pity or anger on helping behavior or punishment (segregation). The right side of Path B represents attributions of dangerousness, subsequent fear, and avoidant behavior. The Figure also describes path models where demographic variables are added as exogenous variables.


Path A
Gender
Ethnicity
Grade
responsibility
pity
anger
help
segregation
Path B
Gender
Ethnicity
Grade
dangerous
fear
avoidance
segregation